

RESEARCH PROPOSALS

February 28, 2008

California Environmental Protection Agency



Air Resources Board

Overview

- Proposals developed from 2007-2008 Research Plan, approved by Board in May 2007
- Proposals have been reviewed by other funding agencies to avoid duplication and overlap
- Proposals have been approved by Board's Research Screening Committee (RSC)
- Total ARB Funding: \$2.2 million
- Total Co-Funding: \$3.5 million
- Dollar-Averaged Overhead Rate: 15%

Proposals Support Central Goals of ARB

- Clarifying health impacts of air pollutant exposures
- Reducing emissions of and exposures to particulate matter (PM)
- Reducing Californians' exposures to ozone
- Characterizing and reducing greenhouse gas (GHG) emission

In-Vehicle Air Pollution Exposure for Study of Pregnant Women and Infants

University of California, Irvine

Dr. Ralph J. Delfino

\$500,000 (36 months)

Co-funded by SCAQMD: \$250,000

Objective: To measure and model in-cabin levels of key air pollutants and apply the results to estimate exposures of pregnant women and infants in NIEHS-funded health study.

Expected Results: Findings will have direct application to health effect studies and eventually to the evaluation of air quality standards for particulate matter and gaseous pollutants.

Evaluation of Portable Particulate Emissions Measurement Systems



Southern Research Institute
Tim Hansen
\$102,722 (18 months)
additional NYSERDA funding:
\$400,000 plus \$462,000 in-kind

Objective: To perform an evaluation of real-time PM measurement instruments under controlled laboratory conditions for gasoline and E85-fueled vehicles.

Expected Results: Identification of PM emission measurement devices will aid in the development of PM emissions inventories and enforcement of emissions standards.

Toxicity of Ultrafine PM Emissions from Compressed Natural Gas Vehicles



West Virginia University
Professor Mridul Gautam
\$349,996 (18 months)
Fully funded by CEC

Objective: To determine physicochemical and toxicological properties of semi-volatile and non-volatile PM fractions from heavy-duty compressed natural gas engines with state-of-the-art after treatment technology.

Expected Results: Data will contribute to the assessment of health impacts of technologies used to meet the latest heavy-duty emission standards and to the evaluation of potential new emission regulations based on characteristics other than PM mass.

Source Apportionment of PM2.5

University of Wisconsin-Madison
Professor James J. Schauer
\$409,962 (36 months)

Objective: To generate a full year of hourly PM2.5 measurements and daily molecular markers measurements at a central site in the South Coast Air Basin.

Expected Results: Determine PM2.5 concentrations from gasoline powered vehicles, diesel engines, biogenic secondary organic aerosol and anthropogenic secondary organic aerosol in Los Angeles.

Ozone Impacts of Architectural Coatings

University of California, Riverside

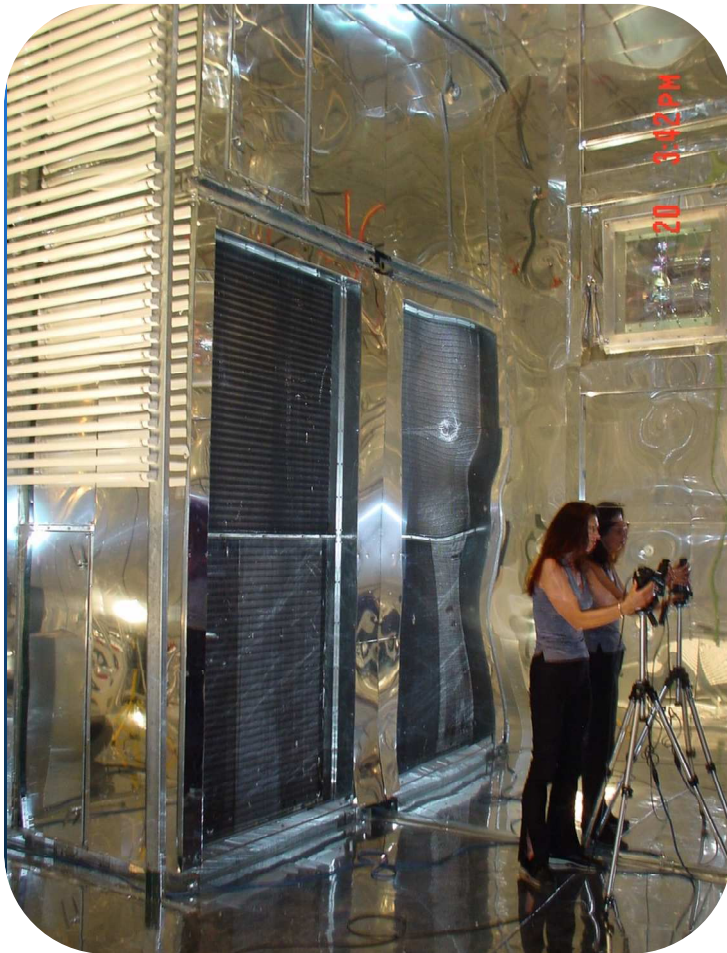
Dr. William Carter

\$200,041 (24 months)

Objective: To develop and test architectural coatings in UCR's environmental chamber modified to obtain better correlations with atmospheric reactivity.

Expected Results: Architectural coating regulations will be tested to obtain more reliable estimates of their ozone impacts. Efforts to give architectural coating manufacturers more flexibility will be based on more reliable estimates of ozone impacts.

Environmental Chamber at UCR



An Airborne Mission to Investigate California Air Quality and Greenhouse Gases

University of California, Irvine

Professor Donald Blake

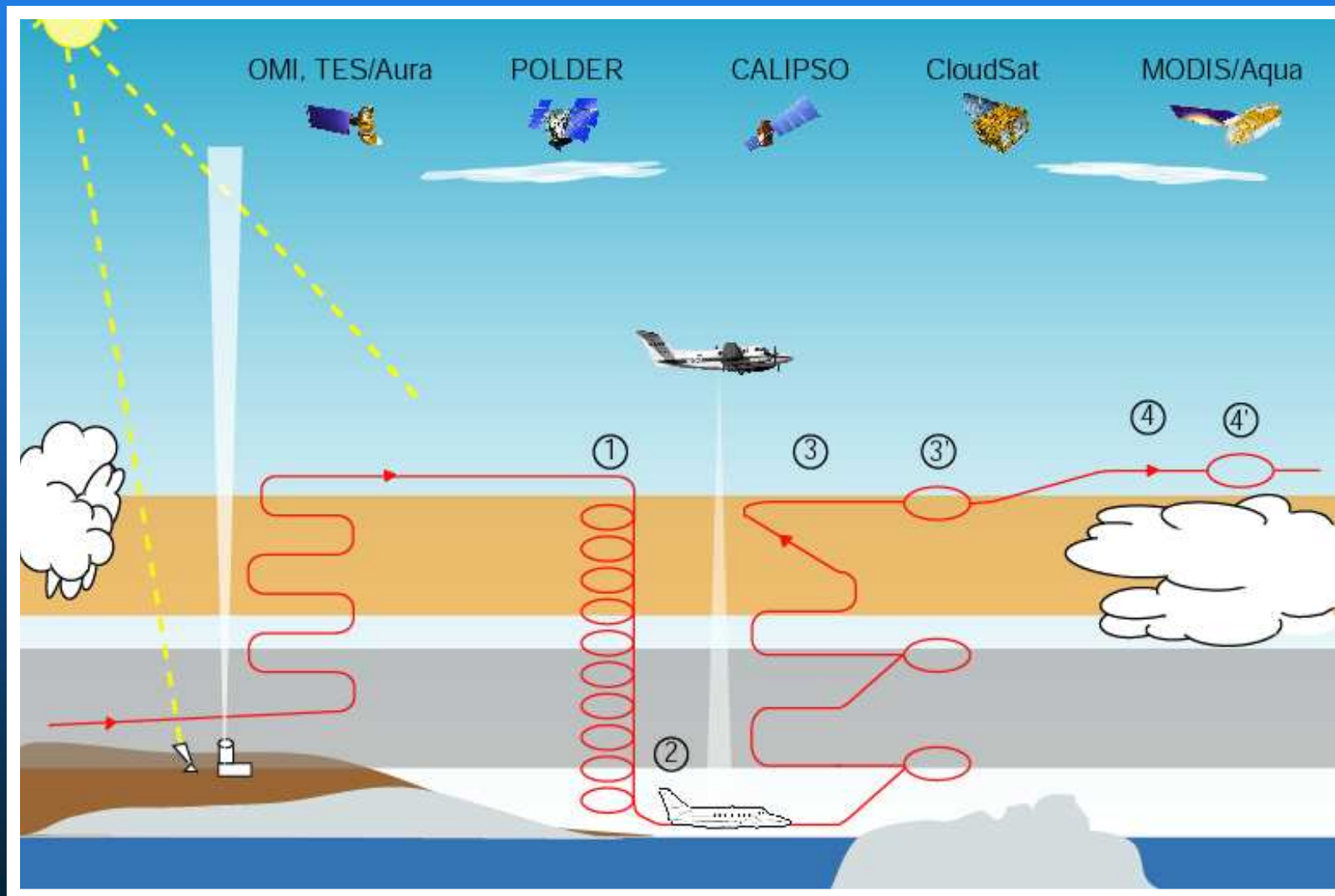
\$400,000 (24 months)

Co-funding from NASA: approximately \$2 million

Objective: To collect air samples aboard the NASA DC-8 research aircraft for a better understanding of ozone and PM2.5 formation, and verification of greenhouse gas emission inventories.

Expected Results: The characterization will address emissions, atmospheric chemical processes, off-shore and aloft boundary conditions, and ocean-land interactions for gases and aerosols important to climate change and protection of human health.

NASA Aircraft and Satellites



Developing a California Inventory for Hydrofluorocarbon Banks and Ozone Depleting Substances Emissions for Foams

Caleb Management Services, Limited

Arnie A.J. Vetter

\$349,758 (23 months)

Objective: To quantify banks and emissions of rigid poly foam in California.

Expected Results: A detailed, bottom-up emissions inventory for high-global warming potential foam blowing agents specific to California, that can be used for the AB32 GHG mitigation program.

The California Climate Change Industry: the Current Market and Prospect for Growth in the Global Economy

Environmental Business International, Inc.

Grant Ferrier

\$196,211 (24 months)

Objective: To define the climate change industry and characterize its current status and assess its relative importance to the California economy today and in the future.

Expected Results: A uniform set of definitions, a projection of the growth of the climate change industry, an assessment of the industry potential contribution to the California economy, a directory of climate change firms, and supporting evidence.

RECOMMENDATION

**Approve Resolutions
08-14 through 08-21**